

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0002-00(409) Dougherty **OFFICE:** Engineering Services
 NH000-0006-02(056)
 P.I. Nos.: 0002409 & 422560
 SR 520/Clark Ave. and Ramp Improvements **DATE:** February 17, 2011

FROM: Ronald E. Wishon, State Project Review Engineer *REW*

TO: Bobby K. Hilliard, PE, State Program Delivery Engineer
 Attn.: Albert Shelby

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above projects was held November 1-4, 2010. Responses were received on February 16, 2011. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
A-1	Instead of full depth reconstruction, rehabilitate and resurface existing pavement where feasible	\$1,126,000	No	If the mill and inlay alternative is implemented, the rehabbed pavement would be 47% under-designed. The mill and inlay would be a temporary treatment, not a long-term solution. The existing pavement would not last until the next rehab cycle.
A-2	Remove full depth pavement under raised concrete median and use raised grass median instead	\$670,000	No	The pavement under the proposed median will be used for staging traffic during construction.
A-2.1	Reduce full depth pavement thickness under median	\$177,000	No	The constructability concerns and the expense of implementing a shallower median section in between two full depth sections would negate any materials savings shown by the VE Team. The pavement under the proposed median will be used for staging traffic.
A-4	Reduce depth of pavement section on ramp shoulders	\$43,000	No	Traffic counts indicated a high 24-hour truck percentage of 22%.

A-7	Reduce depth of pavement section on Cordele Road	\$269,000	Yes	This will be done, pending approval by the Pavement Design Committee.
A-7.1	Implement mill and inlay on Cordele Road	Proposed = \$669,000 Actual = \$374,640	Yes, partially	Due to adjustment to the roadway profile grade, 56% of the existing pavement (Sta. 411+50 to Sta. 422+50) will be milled and overlaid. The remaining pavement (44%) will be full depth. The savings have been adjusted accordingly.
B-1	Use 12 ft shoulder on both sides of Clark Ave.	\$318,000	No	The 16 ft wide shoulder is required to provide adequate width for an 8 ft wide shared use path and for utility relocations. There are several utilities (Bellsouth, Alltel, Albany Water, Gas and Light, Georgia Power, Distribution, Mega Power transmission and Mediacom) along the corridor. Note: Sections of the shoulder on the north side will be reduced by the implementation of B-6.
B-4	Shift SR 300/Clark Ave. alignment north in the vicinity of the water tower	\$273,000	No	The proposed alignment provides Miller Brewing Company with adequate access for their vehicles to enter the property to access the water tower and eliminates the possible cost to cure for loss of parking.
B-6	Implement rural section on north side of Clark Ave. from Sta. 28+00 to Sta. 93+00	\$486,000	Yes	This will be done.
C-3	Eliminate 6 inch GAB extension beyond the curb and gutter	\$35,000	Yes	This will be done.
D-1	Use spillways in lieu of catch basins in areas with ditches	\$75,100	Yes	This will be done.
D-2	Use roadside ditches/bioswales in lieu of detention ponds	\$101,400	Yes	This will be done.

D-4	Use modified rural section in select area	\$121,000	No	The VE recommendation assumed that permanent easement would be converted to ROW at the same cost. Using more accurate cost figures, and better calculations of clear zone, this recommendation would require a minimum of 6 relocations, along with additional ROW and easement. These additional costs would negate the proposed savings.
E-1	Reduce the median width from 16 feet to 6 feet	\$510,000	No	The 16 ft wide median provides enough width to develop the left-turn lanes at the intersection approaches. Based on the design speed of 45 mph, projected traffic volume and 24 hour truck percentage, the 16 ft wide median provides better separation of opposing traffic.
G-1	Eliminate the sidewalk on the north side	\$159,000	Yes	This will be done. Rural shoulders will be implemented on the north side of the project in accordance with recommendation B-6. There are two landowners along this section of the project (C&J Investments and Miller Brewing Company), and there are no plans to develop the property. Sidewalk will be provided along the south side of the roadway.
G-2	Use asphalt sidewalk in lieu of concrete	\$263,000	No	Due to long term maintenance costs and the need to provide uniform concrete sidewalks along the corridor, this recommendation will not be implemented.
G-4	Use alternate detail for under-bridge pier protection	\$111,000	Yes	This will be done.

The Office of Engineering Services concurs with the Project Manager's responses. The Project Manager has indicated that the applicable offices (OMR and/or Roadway Design) have concurred with his responses.

Approved:  Date: 2/18/2011
 Gerald M. Ross, PE, Chief Engineer

REW/LLM

Attachments

c: Ben Buchan
Bobby Hilliard/Stanley Hill/Albert Shelby
Russell McMurry/Chuck Hasty/Neil O'Brien/Rishee Shah/Peter Eze
Amber Phillips
Joe Sheffield/Tony Cravey/Scott Chambers/Geno Hasty
Brent Thomas/Bill Cooper/Tim Warren/Van Mason
Ken Werho
Lisa Myers
Matt Sanders

DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE NH-006-2(56), Dougherty County **OFFICE** Program Delivery
SR 3/Liberty Expressway @ Clark AV – Ramps & Turn Lanes
STP00-0002-00(409), Dougherty County
Clark Avenue from Turner Field Road to Cordele Road
P.I. Numbers 422560 & 0002409 **DATE** February 14, 2011

FROM Bobby K. Hilliard, P.E., State Program Delivery Engineer *B.K.H.*

TO Ron Wishon, State Review Engineer

SUBJECT Value Engineering Study Report Responses

This Office has received and reviewed the Value Engineering Study Final Report dated November 16, 2010. The study has developed eighteen alternatives. The following are the alternatives with Program Delivery's recommendations for each after consultation with the Subject Matter Expert offices. If there are questions or concerns, please contact the Project Manager, Albert Shelby, at 404-631-1758.

Section A – AC Pavement

A-1: Re-use existing pavement

(Coordinated with OMR)

No, will not implement.

The preferred full-depth section is 9.5 inches and not 10.5 inches, which will reduce the savings of the mill-and-inlay alternative.

Also, if the mill-and-inlay alternative is selected, the rehabbed pavement will be about 47% under-designed. The VE Team uses the implied assumption that the currently existing pavement will not significantly deteriorate anymore and will be suitable to rehab 3 more times.

That doesn't seem to be a realistic assumption. The argument that an aged road that is already in poor condition, 47% under-designed, and with 14% Trucks will last at least another 30 years seems to be difficult to defend. The mill-and-inlay is just a temporary treatment, not a long-term solution. The existing pavement probably will not last until the next rehab and reconstruction will be required at that time, which will create two different maintenance cycles because the inside and outside lanes will have two different structures.

A-2: Remove full depth pavement section under the median

(Coordinated with Roadway Design)

No, will not implement. The median needs to be used for staging traffic during construction.

A-2.1: Reduce full depth pavement thickness under the median

(Coordinated with OMR and Roadway Design)

No, will not implement. The constructability concerns and expense of implementing a shallower median section in-between two full depth sections would negate any materials savings shown by the VE team. The median pavement will be used for staging traffic. When constructing the asphalt layers that would be the maintenance of traffic pavement, the shoulder will be removed and paved over. Separate slivers of pavement depths will require different excavation depths, causing the median section to be shored to remain standing and then shoring removal for the layers to be placed.

A-4: Reduce depth of pavement section on ramp shoulder

(Coordinated with Roadway Design)

No, will not implement due to high 24-hour truck percentage of 22% according to the December 2010 traffic counts received.

A-7: Reduce depth of pavement section on Cordele Road

(Coordinated with OMR and Roadway Design)

Yes, will implement, pending pavement design approval.

A-7.1: Implement mill and inlay on Cordele Road

(Coordinated with Roadway Design)

Yes, will implement partially. Due to the adjustment to the roadway profile grade, 56% of the existing pavement (sta. 411+50 to sta. 422+50) will be milled and overlaid as recommended. The rest of the pavement (44%) will be full depth. The 56% implementation amounts to a savings of \$374,640.00.

Section B – Right of Way

B-1: Narrow the shoulder to 12 feet

(Coordinated with Roadway Design)

No, will not implement. The 16-foot wide shoulder is required to provide adequate width for an 8-foot wide shared use path and utility relocations. (Note: The positive response to recommendation B-6 will eliminate the 16-foot wide urban shoulder on the north side of Clark Avenue.) The utilities are Bellsouth: Alltel: Albany Water, Gas and Light; Georgia Power Distribution; Mega Power transmission and Mediacom.

B-4: Shift Clark Ave. alignment north near water tower

(Coordinated with Roadway Design)

No, will not implement. GDOT is trying to provide Miller Brewing Company with adequate access for their vehicles to ingress and egress the property to access the water tower and to eliminate possible cost to cure for loss of parking.

B-6: Implement rural section on north side of Clark Ave. Sta. 28+00 to 93+00

(Coordinated with Roadway Design)

Yes, will implement.

Section C – Aggregate Base

C-3: Eliminate the 6 inch graded base extension

(Coordinated with Roadway Design)

Yes, will implement.

Section D – Storm Drainage

D-1: Use spillways in lieu of catch basins in areas of ditches

(Coordinated with Roadway Design)

Yes, will implement.

D-2: Use roadside ditches / bioswales in lieu of detention ponds

(Coordinated with Roadway Design)

Yes, will implement.

D-4: Use modified rural section in select area

(Coordinated with Roadway Design)

No, will not implement. The VE recommendation in the report assumed that the permanent easement would be converted to required right of way and that the cost for each is the same. The permanent easement cost estimate submitted to the VE team used a price per square foot cost that is half of the price per square foot of required right of way. The additional cost to convert permanent easement to required right of way is \$35,903.05. The VE report recommendation did not provide dimensions for the modified rural section. This office assumes the modified rural section will meet clear zone distance requirements. This office developed a typical section for the modified rural section (see attachment). The modified rural section will require 43 feet of right of way from the edge of pavement and additional 10-foot of easement to tie in the slopes. Using this typical section will require additional required right of way and easement at a cost of \$69,400.07. It will also require the relocation of a minimum of 6 mobile homes at a cost of \$240,000. The additional cost for right of way and relocation of trailers will be \$309,400.07. This cost is higher than the proposed savings in the VE Report recommendation.

Section E – Concrete Median

E-1: Reduce median width from 16 ft. to 6 ft.

(Coordinated with Roadway Design)

No, will not implement. The 16-foot wide median provides enough width to develop the left-turn lane at the intersection approaches. The 6-foot wide median would have to be tapered out to a sufficient width to develop the left-turn lane at the approaches of each intersection. Based on the design speed of 45 mph, projected traffic volume, and 24 hour truck percentage, the 16-foot wide median provides better separation of opposing traffic and a consistent roadway corridor width.

Section G – Concrete Sidewalk

G-1: Eliminate the sidewalk on the north side

(Coordinated with Roadway Design)

Yes, will implement, in conjunction with B-6.

G-2: Use asphalt sidewalks in lieu of concrete

(Coordinated with Roadway Design and District 4 Area Construction)

No, will not implement due to long term maintenance costs and the need to provide uniform concrete sidewalks along the corridor.

The District recommends that the sidewalks on this project should be constructed with concrete based on several reasons:

Constructability: Asphalt sidewalks would require multiple operations (GAB, asphalt) and would require specialized equipment to pave such a narrow width and would increase the cost and decrease any potential savings.

Aesthetics: Concrete sidewalks would be consistent with surrounding sidewalks.

G-4: Use alternate detail for under –bridge pier protection

(Coordinated with Roadway Design)

Yes, will implement.

S.H.
BKH:SH:avs
Attachment

Converting Permanent Easement to Required Right of Way

From Station 54+50 + 72+50 = 1800 FT.

Current PERM EASMT = 31,913.8239 SQFT

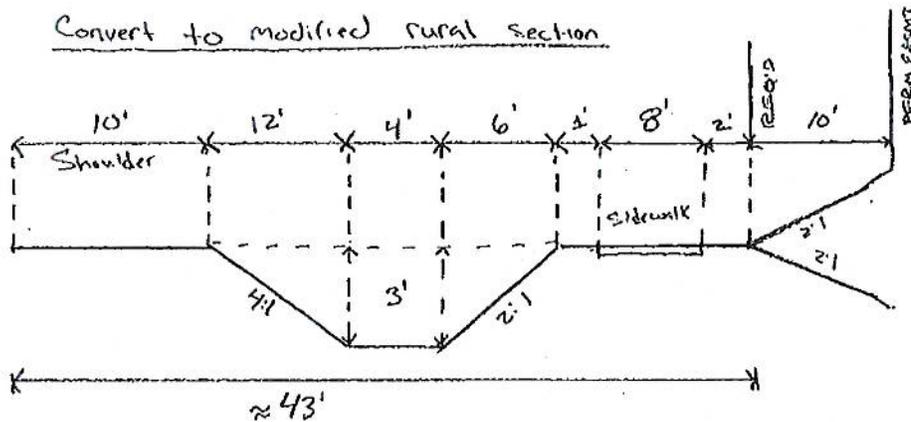
$$\begin{aligned} \hookrightarrow \text{Cost of Perm EASMT} &= (31,913.8239) (\$2.25/\text{sf}) (50\%) \\ &\Rightarrow \$35,903.05 \end{aligned}$$

$$\begin{aligned} \hookrightarrow \text{Cost to Convert to REQ'D} &\Rightarrow (31,913.8239) (\$2.25/\text{sf}) \\ &\Rightarrow \$71,806.10 \end{aligned}$$

\hookrightarrow Difference of Cost

$$\hookrightarrow \underline{\$35,903.05} \Rightarrow \text{additional cost to current estimate}$$

Convert to modified rural section



Assumed: 4:1 front slope; 4' flat bottom ditch; 3' depth; 2:1 back slope; 10' PERM

$$\hookrightarrow \text{Cost of additional REQ'D} \approx (7838.82 \text{ SF}) (\$2.25/\text{sf}) \Rightarrow \underline{\$17,637.35}$$

$$\hookrightarrow \text{Cost of additional PERM EASMT} \approx (14097.488 \text{ SF}) (\$2.25/\text{sf}) (50\%) \Rightarrow \underline{\$15,859.67}$$

$$\hookrightarrow \text{Total cost of R/W} \Rightarrow \$35,903.05 + 17,637.35 + 15,859.67 \Rightarrow \underline{\$69,400.07}$$

Additional Cost for displacements

Approximately 6-7 trailers impacted from new R/W + Perm easmt
 @ \$40,000 each \Rightarrow \$240,000.00 - \$280,000.00

$$\text{Total Cost} = \$69,400.07 + \$240,000.00 = \underline{\$309,400.07}$$

